Fig. 1

Fig. 2

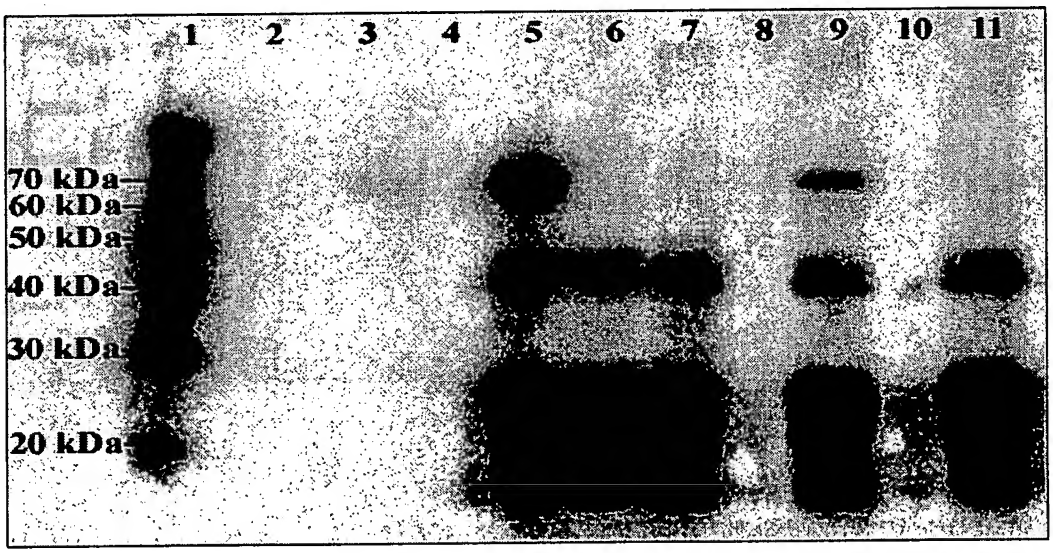

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Fig. 3

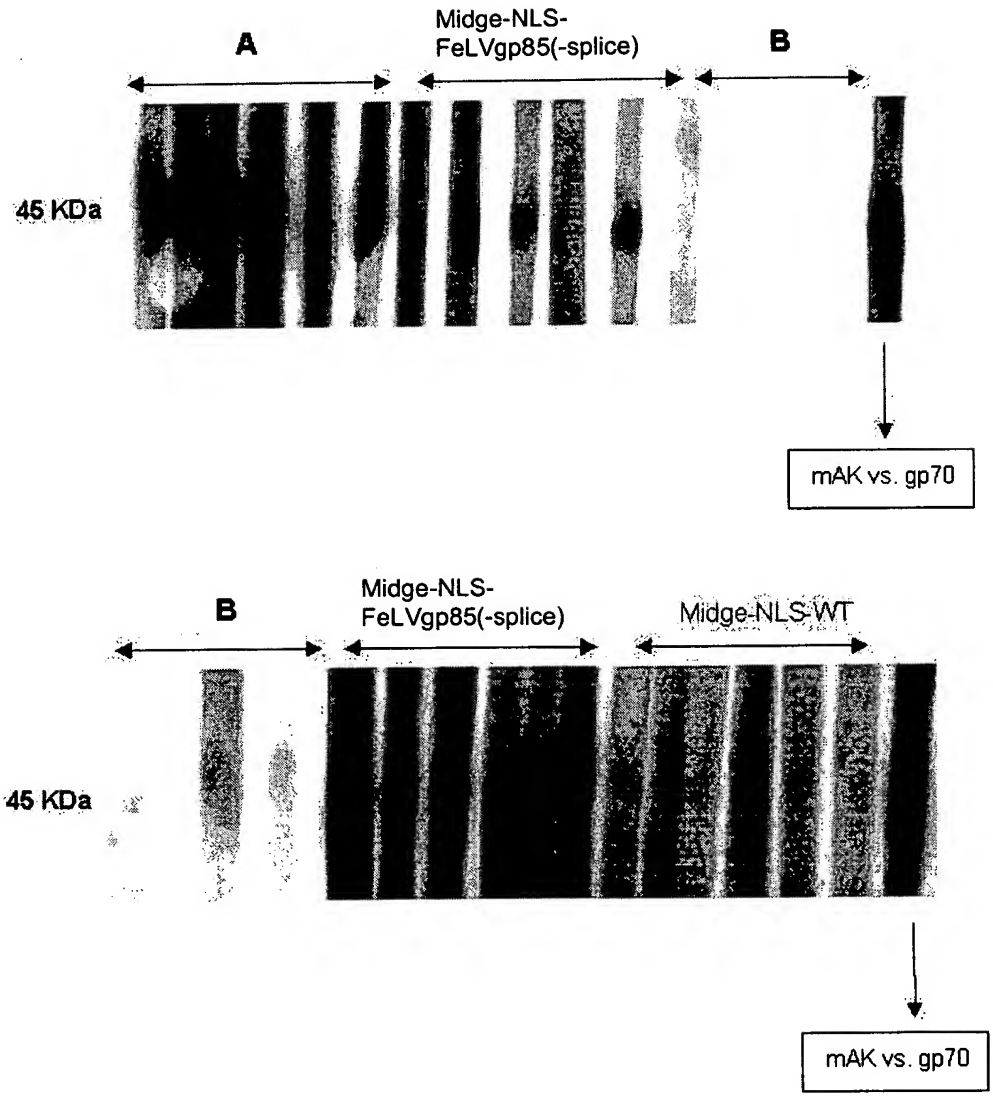

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Fig. 4: DNA sequence comparison of the wild type "gag" gene (Seq.ID2) against the codon-optimized "gag" gene (Seq.ID5).

```
SeqID2   1    ATGGGCCAAACTATAACTACCCCCTTGAGCCTCACCCTCAACCACTGGTCTGAGGTTCAG
SeqID5   1    """""""""G""C""C""C""""""""C""""""""G""""""G""""""""""AGC""""""G"""

SeqID2   61   GCACGGGCCCGTAATCAGGGTGTCGAAGTCCGGAAAAAGAAATGGATTACACTGTGTGAA
SeqID5   61   ""CA""""""A"G""C""""""C""G""G""GA""""""G""""""G""""""C""C""""""C""G

SeqID2   121  GCCGAATGGGTAATGATGAATGTAGGTTGGCCCCGAGAAGGAACTTTCACCATTGACAAT
SeqID5   121  """""G""""""G""""""""""C""G""C""""""A"G""G""C""C""""""""""C""""""C

SeqID2   181  ATTTCACAGGTCGAGGAGAGAATCTTCGCCCCGGGGCCATATGGACACCCAGATCAAATC
SeqID5   181  ""CAGC""""""G""""""""""G""""""""""""C""C""C""C""C""""""C""C""G""""

SeqID2   241  CCTTATATTACCACGTGGAGATCCCTAGCCACAGACCCCCCTCCATGGGTTCGCCCATTC
SeqID5   241  ""C""C""C""""""C""""""GAG""""G""""""C""""""""""C""C""""""GA"G""C""""

SeqID2   301  CTACCCCCTCCTAAGCATCCCAGGACAGATCCTCCCGAGCCTCTTTCGCCGCAACCTCTT
SeqID5   301  ""G""""""C""C""""""C""""""""""C""C""C""""""""""C""GAGC""C""G""C""G

SeqID2   361  GCGCCGCAACCC_TC_TTCCCCCCA_CCCCGTCCTCTACCCCGTTCTCCCCAAACCAGAC
SeqID5   361  ""C""C""G""""AG"GCC""""""""T"AG"AG""""G""""""""""G""G""""""G""C""""

SeqID2   418  CCCCCCAAGGCGCCTGTATTACCACCCAATCCTTCTTCCCCTTTAATTGATCTCTTAACA
SeqID5   421  """""""""""""C""C""GC"G""C""""""C""CAGCAG""""CC"G""C""C""GC"G""C

SeqID2   478  GAAGAGCCACCTCCCTATCCTGGGGGTCACGGGCCAACACCGCCGTCAGGCCCTAGAACC
SeqID5   481  ""G""""""C""C""""""C""C""C""C""""""C""C""C""C""C""CAGC""""""C""G""""

SeqID2   538  CCAACTGCCTCCCCGATTGCCATCCGGCTGCGAGAACGACGAGAAAATCCAGCTGAGAAA
SeqID5   541  ""C""C""""AG""""C""C""""G"A""""""A"G""GA"GA"G""G""C""C""C""""""G

SeqID2   598  TCTCAAGCCCTCCCCTTAAGGGAAGACCCAAACAACAGACCCCAGTACTGGCCATTCTCG
SeqID5   601  AGC""G""""""G""""C"G""""""G""""""C""""""""""G""""""""""""""""C""""AGC

SeqID2   658  GCCTCTGACCTGTACAATTGGAAATTGCATAA_CCCCCCTTTCTCCCAGGACCCAGTGGC
SeqID5   661  """AGC""""""""""""""C""""""GC""""C""C""""""""""_"AG""""""""""C""""""

SeqID2   717  CCTAACTAACCTAATTGAGTCCATTTTAGTGACACATCAGCCAACCTGGGACGACTGCCA
SeqID5   720  """G""C""""""G""C""""AG""""CC"G""""""C""C""""""C""""""""""""""""""""

SeqID2   777  ACAGCTCTTACAGGCTCTCCTGACGGCAGAGGAGAGACAAAGGGTCCTCCTTGAAGCCCG
SeqID5   780  G""""""GC"G""""""C""G""""""C""C""""""""""G""G""""""G""G""G""G""""A"

SeqID2   837  AAAGCAAGTTCCAGGCGAGGACGGACGGCCAACCCAGCTGCCCAATGTCGTTGACGAGGC
SeqID5   840  G""""""G""G""C""""""""""""""CA""""""C""""""""""""""""""""C""G""G""""""""

SeqID2   897  TTTCCCCTTGACCCGTCCCAACTGGGATTTTTGTACGCCGGCAGGTAGGGAGCACCTACG
SeqID5   900  C""""""""C""""""A"G""""""""""""""C""C""C""C""C""C""C""C""""""""""""GA"

SeqID2   957  CCTTTATCGCCAGTTGCTGTTAGCGGGGCTCCGCGGGGCTGCAAGACGCCCCACTAATTT
SeqID5   960  G""G""CA"G""""C""""""C"G""C""C""C""GA"G""C""C""C""C""GA"G""""""C""CC"

SeqID2   1017 GGCACAGGTAAAGCAAGTTGTACAAGGGAAAGAGGAAACGCCAGCCTCATTCTTAGAAAG
SeqID5   1020 """C""""""G""""""G""G""G""G""C""G""""""G""A""C""""AGC""""C"G""G""

SeqID2   1077 ATTAAAAGAGGCTTACAGAATGTATACTCCCTATGACCCTGAGGACCCAGGGCAGGCTGC
SeqID5   1080 GC"G""G""""""C""""""G""""""C""C""""""C""""""C""""""""""C""C""""""CA"

SeqID2   1137 TAGTGTTATCCTGTCCTTTATCTACCAGTCTAGCCCGGACATAAGAAATAAGTTACAAAG
SeqID5   1140 C""C""G""""""AG""""C""""""""""AGC""""""C""""""C""G""C""""C"G""G""
```

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SeqID2   1197 GCTAGAAGGCCTACAGGGGTTCACACTGTCTGATTTGCTAAAAGAGGCAGAAAAGATATA
SeqID5   1200 """G""G""""""G""""""C""""""C""""AGC""CC""""""G""G""""""C""G""""""C""

SeqID2   1257 CAACAAAAGGGAAACCCCAGAGGAAAGGGAAGAAAGATTATGGCAGCGGCAGGAAGAAAG
SeqID5   1260 """""""G""""""G""A""C""""""G""""""G""G""GC"G""""""""A""""""""G""G""

SeqID2   1317 AGATAAAAAGCGCCATAAGGAGATGACTAAAGTTCTGGCCACAGTAGTTGCTCAGAATAG
SeqID5   1320 G""C""G""""A"G""C""""""""""""""C""G""G""""""""""C""G""G""C""""""C""

SeqID2   1377 AGATAAGGATAGAGGGGAAAGTAAACTGGGAGATCAAAGGAAAATACCTCTGGGGAAAGA
SeqID5   1380 G""C""""""C""G""C""G""C""G""""""C""C""G""""""G""C""C""""""C""G""

SeqID2   1437 CCAGTGTGCCTATTGCAAGGAAAAGGGACATTGGGTTCGCGATTGCCCGAAACGACCCCG
SeqID5   1440 """""""C""""""C""""""""""G""""""C""C""""""GA"G""C""""""C""GA"G""""A"

SeqID2   1497 GAAGAAACCCGCCAACTCCACTCTCCTCTAA
SeqID5   1500 """""""G""""""""""AG""""C""G""G""G
```

Fig. 5 DNA sequence comparison of the wild type „env" (gp70 region from Seq.ID1) against the codon- and signal optimized „env" gene (gp70; Seq.ID8).

```
SeqID11     1  ATGGAAAGTCCAACGCACCCAAAACCCTCTAAAGATAAGACTCTCTCGTGGAACTTAGCG
SeqID8      1  """""GTCC""C""C""""""C""G""""""C""G""C""""""C""G""C""""""A"G"T"

SeqID11    61 TTTCTGGTGGGGATCTTATTTACAATAGACATAGGAATGGCCAATCCTAGTCCACACCAA
SeqID8     61 ""C""""""""""C""""C"G""C""C""T""""""T""C""""""""""C""CTCC""C"C""GG

SeqID11   121 ATATATAATGTAACTTGGGTAATAACCAATGTACAAACTAACACCCAAGCTAACGCCACC
SeqID8    121 ""C""C""""""G""C""""""G""C""""""""G""G""C""""""""G""C""T""""""

SeqID11   181 TCTATGTTAGGAACCTTAACCGATGCCTACCCTACCCTACATGTTGACTTATGTGACCTA
SeqID8    181 """""""C"G""C""""C"G""A""""""A""""""C""""""G""""""G""""C"G""""""""G

SeqID11   241 GTGGGAGACACCTGGGAACCTATAGTCCTAAACCCAACCAATGTAAAACACGGGGCACGT
SeqID8    241 """""G""""""""""""""G""C""TCCG""G""""""C""""""""""G""G""T""""""CA"G

SeqID11   301 TACTCCTCCTCAAAATATGGATGTAAAACTACAGATAGAAAAAAACAGCAACAGACATAC
SeqID8    301 """""""""""""C""G""""""C""C""G""C""""""C""G""G""G""""""G""""""C""""

SeqID11   361 CCCTTTTACGTCTGCCCCGGACATGCCCCCTCGTTGGGGCCAAAGGGAACACATTGTGGA
SeqID8    361 """""""C""T""G""""""T""C""""""""""""""CC""""C""C""""""C""C""C""""""G

SeqID11   421 GGGGCACAAGATGGGTTTTGTGCCGCATGGGGATGTGAGACCACCGGAGAAGCTTGGTGG
SeqID8    421 """""""C""G""""""C""C""""""T""C""""""C""""""A""""""A""G""G""C""""""""

SeqID11   481 AAGCCCACCTCCTCATGGGACTATATCACAGTAAAAAGAGGGAGTAGTCAGGACAATAGC
SeqID8    481 """""""""""""""""C""""""""C""""""""G""G""G""CTCCTCC""""""""""CTC"

SeqID11   541 TGTGAGGGAAAATGCAACCCCCTGGTTTTGCAGTTCACCCAGAAGGGAAGACAAGCCTCT
SeqID8    541 """""""""C""G""""""""""""""""GC""""""""""""""""""""""C""G""G""""""C

SeqID11   601 TGGGACGGACCTAAGATGTGGGGATTGCGACTATACCGTACAGGATATGACCCTATCGCT
SeqID8    601 """""""T""C""C""""""""""""CC""A"G""G""""A"G""""""C""""""""""C""T""C

SeqID11   661 TTATTCACGGTGTCCCGGCAGGTATCAACCATTACGCCGCCTCAGGCAATGGGACCAAAC
SeqID8    661 C"G""""""A""""""A""""""""G""C""""""C""C""C""C""""""C""""""C""C""""

SeqID11   721 CTAGTCTTACCTGATCAAAAACCCCCATCCCGACAATCTCAAACAGGGTCCAAAGTGGCG
SeqID8    721 ""G""GC"G""""""C""G""G""""""C""""A"G""G""C""G""""""C""""""G""""""C

SeqID11   781 ACCCAGAGGCCCCAAACGAATGAAAGCGCCCCAAGGTCTGTTGCCCCCACCACCATGGGT
SeqID8    781 """""""""""""""G""C""""""GTCT""""""C""""""""""G""""""""""""""""""C

SeqID11   841 CCCAAACGGATTGGGACCGGAGATAGGTTAATAAATTTAGTACAAGGGACATACCTAGCC
SeqID8    841 """""GA""""""""C""A""G""C""""C"G""C""CC"G""G""G""C""C""""""G""""

SeqID11   901 TTAAATGCCACCGACCCCAACAAAACTAAAGACTGTTGGCTCTGCCTGGTTTCTCGACCA
SeqID8    901 C"G""""""""A""""""""""""G""C""G""""""C""""""G""""""""""G""CA"G""C

SeqID11   961 CCCTATTACGAAGGGATTGCAATCTTAGGTAACTACAGCAACCAAACAAACCCCCCCCCCA
SeqID8    961 """""C""T""G""C""""""C""""C"G""C""""""TC""""""G""C""""""""""""C

SeqID11  1021 TCCTGCCTATCTACTCCGCAACACAAACTAACTATATCTGAAGTATCAGGGCAAGGAATG
SeqID8   1021 """""""""G""C""C""C""G""""""G""G""C""C""""""G""G""T""C""G""C""""

SeqID11  1081 TGCATAGGGACTGTTCCTAAAACCCACCAGGCTTTGTGCAATAAGACACAACAGGGACAT
SeqID8   1081 """""T""C""A""G""C""G""""""""""""CC""""""""C""""""C""G""""""C""C

SeqID11  1141 ACAGGGGCGCACTATCTAGCCGCCCCCAACGGCACCTATTGGGCCTGTAACACTGGACTC
SeqID8   1141 """""""""C""""""C""G""T"T""""""""T""""""""""C""""""""""C""""""A""C""G
```

```
SeqID11   1201 ACCCCATGCATTTCCATGGCGGTGCTCAATTGGACCTCTGATTTTTGTGTCTTAATCGAA
SeqID8    1201 """""C""""C""""""""T""""G""C""""""""""""C""C""""GC"G""T""G

SeqID11   1261 TTATGGCCCAGAGTGACTTACCATCAACCCGAATATGTGTACACACATTTTGCCAAAGCT
SeqID8    1261 C"G""""""""G""""C""""C""G""T""G""""""""""""C""C""""""""G"""

SeqID11   1321 GTCAGGTTCCGAAGAGAACCAATATCACTAACGGTTGCCCTTATGTTGGGAGGACTTACT
SeqID8    1321 ""G""""""A"G""G""G""C""C""C""G""A""G""""G""""C""""G""C""G""A

SeqID11   1381 GTAGGGGGCATAGCCGCGGGGGTCGGAACAGGGACTAAAGCCCTCCTTGAAACAGCCTGA
SeqID8    1381 ""G""""""""T""T""T""""G""C""""C""C""G""""G""G""""""""""""
```

Fig. 6 DNA sequence comparison of the wild type „env" gene (Seq.ID1) against the codon- and signal optimized „env" gene (gp85) (Seq.ID7).

```
SeqID1       1 ATGGAAAGTCCAACGCACCCAAAACCCTCTAAAGATAAGACTCTCTCGTGGAACTTAGCG
SeqID7       1 """""GTCC""C""C""""""C""G""""""C""G""C""""""C""G""C""""""A"G"T"

SeqID1      61 TTTCTGGTGGGGATCTTATTTACAATAGACATAGGAATGGCCAATCCTAGTCCACACCAA
SeqID7      61 ""C""""""""""C""""C"G""C""C""T""""""T""C""""""""""C""CTCC""C"C""GG

SeqID1     121 ATATATAATGTAACTTGGGTAATAACCAATGTACAAACTAACACCCAAGCTAACGCCACC
SeqID7     121 ""C""C""""""G""C""""""G""C""""""""""G""G""C""""""""""G""C""T""""""

SeqID1     181 TCTATGTTAGGAACCTTAACCGATGCCTACCCTACCCTACATGTTGACTTATGTGACCTA
SeqID7     181 """""""C"G""C""""C"G""A""""""A""""""C""""""G""""""G""""C"G""""""""""G

SeqID1     241 GTGGGAGACACCTGGGAACCTATAGTCCTAAACCCAACCAATGTAAAACACGGGGCACGT
SeqID7     241 """""""G""""""""""""""G""C""TCCG""G""""""C""""""""""G""G""T""""""CA"G

SeqID1     301 TACTCCTCCTCAAAATATGGATGTAAAACTACAGATAGAAAAAAACAGCAACAGACATAC
SeqID7     301 """""""""""""C""G""""""C""C""G""C""""""C""G""G""G""""""G""""""C""""

SeqID1     361 CCCTTTTACGTCTGCCCCGGACATGCCCCCTCGTTGGGGCCAAAGGGAACACATTGTGGA
SeqID7     361 """""""C""T""G""""""T""C""""""""""""""CC""""""C""C""""""C""C""C""""""G

SeqID1     421 GGGGCACAAGATGGGTTTTGTGCCGCATGGGGATGTGAGACCACCGGAGAAGCTTGGTGG
SeqID7     421 """""""C""G""""""C""C""""""T""C""""""C""""""A""""""A""G""G""C""""""""

SeqID1     481 AAGCCCACCTCCTCATGGGACTATATCACAGTAAAAAGAGGGAGTAGTCAGGACAATAGC
SeqID7     481 """""""""""""""""C""""""""C""""""""G""G""G""CTCCTCC""""""""""CTC"

SeqID1     541 TGTGAGGGAAAATGCAACCCCCTGGTTTTGCAGTTCACCCAGAAGGGAAGACAAGCCTCT
SeqID7     541 """""""""C""G""""""""""""""""""GC""""""""""""""""""""""""C""G""G""""""C

SeqID1     601 TGGGACGGACCTAAGATGTGGGGATTGCGACTATACCGTACAGGATATGACCCTATCGCT
SeqID7     601 """""""T""C""C""""""""""""""CC""A"G""G""""A"G""""""C""""""""""C""T""C

SeqID1     661 TTATTCACGGTGTCCCGGCAGGTATCAACCATTACGCCGCCTCAGGCAATGGGACCAAAC
SeqID7     661 C"G""""""A""""""""A""""""""G""C""""""C""C""C""C""""""C""""""C""C""""

SeqID1     721 CTAGTCTTACCTGATCAAAAACCCCCATCCCGACAATCTCAAACAGGGTCCAAAGTGGCG
SeqID7     721 ""G""GC"G""""""C""G""G""""""C""""A"G""G""C""G""""""C""""""G""""""C

SeqID1     781 ACCCAGAGGCCCCAAACGAATGAAAGCGCCCCAAGGTCTGTTGCCCCCACCACCATGGGT
SeqID7     781 """""""""""""""""G""C""""""GTCT""""""C""""""""""G""""""""""""""""""""C

SeqID1     841 CCCAAACGGATTGGGACCGGAGATAGGTTAATAAATTTAGTACAAGGGACATACCTAGCC
SeqID7     841 """""""GA""""""""C""""A""G""C""""C"G""C""CC"G""G""G""C""C""""""G""""

SeqID1     901 TTAAATGCCACCGACCCCAACAAAACTAAAGACTGTTGGCTCTGCCTGGTTTCTCGACCA
SeqID7     901 C"G""""""""""A""""""""""""G""C""G""""""C""""""G""""""""""G""CA"G""C

SeqID1     961 CCCTATTACGAAGGGATTGCAATCTTAGGTAACTACAGCAACCAAACAAACCCCCCCCCCA
SeqID7     961 """""""C""T""G""C""""""C""""C"G""C""""""""TC""""""G""C""_""""""""""C

SeqID1    1021 TCCTGCCTATCTACTCCGCAACACAAACTAACTATATCTGAAGTATCAGGGCAAGGAAT
SeqID7    1020 C""""""""""G""C""C""C""C""G""""""G""G""C""C""""""G""G""T""C""G""C""

SeqID1    1080 GTGCATAGGGACTGTTCCTAAAACCCACCAGGCTTTGTGCAATAAGACACAACAGGGACA
SeqID7    1080 """""""T""C""A""G""C""G""""""""""""CC""""""""C""""""C""G""""""C""

SeqID1    1140 TACAGGGGCGCACTATCTAGCCGCCCCCAACGGCACCTATTGGGCCTGTAACACTGGACT
SeqID7    1140 C""""""""""C""""""C""G""T""T""""""""T""""""""""C""""""""""C""""""A""C""
```

```
SeqID1   1200 CACCCCATGCATTTCCATGGCGGTGCTCAATTGGACCTCTGATTTTTGTGTCTTAATCGA
SeqID7   1200 G"""""C"""""C"""""""""T""""""G""C""""""""""""""C""C""""""GC"G""T""

SeqID1   1260 ATTATGGCCCAGAGTGACTTACCATCAACCCGAATATGTGTACACACATTTTGCCAAAGC
SeqID7   1260 GC"G""""""""""G""""""C""""""C""G""T""G""""""""""""C""C""""""""G""

SeqID1   1320 TGTCAGGTTCCGAAGAGAACCAATATCACTAACGGTTGCCCTTATGTTGGGAGGACTTAC
SeqID7   1320 """G""""""""A"G""G""G""C""C""C""G""A""G""""""G""""C""""G""C""G""

SeqID1   1380 TGTAGGGGGCATAGCCGCGGGGGTCGGAACAGGGACTAAAGCCCTCCTTGAAACAGCCCA
SeqID7   1380 A""G""""""""""T""T""T""""""G""C""""""C""C""G""""""G""G""""""""""""

SeqID1   1440 GTTCAGACAACTACAAATGGCCATGCACACAGACATCCAGGCCCTAGAAGAATCAATTAG
SeqID7   1440 """""""""""""""""""""""""""""""""""""""""""""""""""""""""G""""G""""

SeqID1   1500 TGCCTTAGAAAAGTCCCTGACCTCCCTTTCTGAAGTAGTCTTACAAAACAGACGGGGCCT
SeqID7   1500 C""T""""""""""A""""""""""""""""C""""""""""""""C""""""""""""""A""""""

SeqID1   1560 AGATATTCTATTCTTACAAGAGGGAGGGCTCTGTGCCGCATTGAAAGAAGAATGTTGCTT
SeqID7   1560 """""""""""""""C""""""""""""""""A""""""""""""""""A""""""""""""""""T""

SeqID1   1620 CTATGCGGATCACACCGGACTCGTCCGAGACAATATGGCCAAATTAAGAGAAAGACTAAA
SeqID7   1620 T""""""A""""""""""""""T"A""""""""T""""""""T""""""""""""""""""T""""""

SeqID1   1680 ACAGCGGCAACAACTGTTTGACTCCCAACAGGGATGGTTTGAAGGATGGTTCAACAAGTC
SeqID7   1680 """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID1   1740 CCCCTGGTTTACAACCCTAATTTCCTCCATTATGGGCCCCTTACTAATCCTACTCCTAAT
SeqID7   1740 """""""""C""""""""""""""""""""""""T""""""""""""""""G""T""""""G""""""""""

SeqID1   1800 TCTCCTCTTCGGCCCATGCATCCTTAACCGATTAGTACAATTCGTAAAAGACAGAATATC
SeqID7   1800 """""""""""""""""""""""""""""""""""""""""G""G""""""""""""""""""""""""""""

SeqID1   1860 TGTGGTACAGGCTTTAATTTTAACCCAACAGTACCAACAGATAAAGCAATACGATCCGGA
SeqID7   1860 G""""""""""A""C""""G""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID1   1920 CCGACCATGA
SeqID7   1920 """""""""""
```

Fig. 7 Protein sequence comparison of the wild type "gag" protein (Seq.ID4) against the protein sequence of the codon-optimized "gag" protein (Seq.ID6).

```
SeqID4    1   MGQTITTPLSLTLNHWSEVQARARNQGVEVRKKKWITLCEAEWVMMNVGWPREGTFTIDN
SeqID6...1    """""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...61   ISQVEERIFAPGPYGHPDQIPYITTWRSLATDPPPWVRPFLPPPKHPRTDPPEPLSPQPL
SeqID6...61   """""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...121  APQPSSPHPV_LYPVLPKPDPPKAPVLPPNPSSPLIDLLTEEPPPYPGGHGPTPPSGPRT
SeqID6...121  """""A"PISS""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...180  PTASPIAIRLRERRENPAEKSQALPLREDPNNRPQYWPFSASDLYNWKLHNPPFSQDPVA
SeqID6...181  """""""""S""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...240  LTNLIESILVTHQPTWDDCQQLLQALLTAEERQRVLLEARKQVPGEDGRPTQLPNVVDEA
SeqID6...241  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...300  FPLTRPNWDFCTPAGREHLRLYRQLLLAGLRGAARRPTNLAQVKQVVQGKEETPASFLER
SeqID6...301  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...360  LKEAYRMYTPYDPEDPGQAASVILSFIYQSSPDIRNKLQRLEGLQGFTLSDLLKEAEKIY
SeqID6...361  """""""""""""""""""""T""""""""""""""""""""""""""""""""""""

SeqID4...420  NKRETPEEREERLWQRQEERDKKRHKEMTKVLATVVAQNRDKDRGESKLGDQRKIPLGKD
SeqID6...421  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID4...480  QCAYCKEKGHWVRDCPKRPRKKPANSTLL
SeqID6...481  """""""""""""""""""""""""""""
```

Fig. 8 Protein sequence comparison of the wild type „env" protein (Seq.ID3) against the protein sequence of the codon- and signal optimized „env" protein (gp70) (Seq.ID10).

```
SeqID3     1   MESPTHPKPSKDKTLSWNLAFLVGILFTIDIGMANPSPHQIYNVTWVITNVQTNTQANAT
SeqID10    1   """""""""""""""""""""MV""""""""""""""""""""PR""""""""""""""""""""

SeqID3    61   SMLGTLTDAYPTLHVDLCDLVGDTWEPIVLNPTNVKHGARYSSSKYGCKTTDRKKQQQTY
SeqID10   61   """""""""""""""""""""""""""""""""""""""""p""""""""""""""""""""""""""""""""""""""""

SeqID3    121  PFYVCPGHAPSLGPKGTHCGGAQDGFCAAWGCETTGEAWWKPTSSWDYITVKRGSSQDNS
SeqID10   121  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3    181  CEGKCNPLVLQFTQKGRQASWDGPKMWGLRLYRTGYDPIALFTVSRQVSTITPPQAMGPN
SeqID10   181  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3    241  LVLPDQKPPSRQSQTGSKVATQRPQTNESAPRSVAPTTMGPKRIGTGDRLINLVQGTYLA
SeqID10   241  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3    301  LNATDPNKTKDCWLCLVSRPPYYEGIAILGNYSNQTNPPPSCLSTPQHKLTISEVSGQGM
SeqID10   301  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3    361  CIGTVPKTHQALCNKTQQGHTGAHYLAAPNGTYWACNTGLTPCISMAVLNWTSDFCVLIE
SeqID10   361  """""""""""""""""""""""""""""""""v""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3    421  LWPRVTYHQPEYVYTHFAKAVRFRREPISLTVALMLGGLTVGGIAAGVGTGTKALLETA
SeqID10   421  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""
```

Fig. 9 Protein sequence comparison of the wild type „env" protein (Seq.ID3) against the protein sequence of the codon- and signal optimized „env" protein (gp85) (Seq.ID9).

```
SeqID3    1  MESPTHPKPSKDKTLSWNLAFLVGILFTIDIGMANPSPHQIYNVTWVITNVQTNTQANAT
SeqID9    1  """""""""""""""""""""MV""""""""""""""""""""PR""""""""""""""""""""

SeqID3   61  SMLGTLTDAYPTLHVDLCDLVGDTWEPIVLNPTNVKHGARYSSSKYGCKTTDRKKQQQTY
SeqID9   61  """""""""""""""""""""""""""""""""""""p""""""""""""""""""""""""""""""""""

SeqID3  121  PFYVCPGHAPSLGPKGTHCGGAQDGFCAAWGCETTGEAWWKPTSSWDYITVKRGSSQDNS
SeqID9  121  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  181  CEGKCNPLVLQFTQKGRQASWDGPKMWGLRLYRTGYDPIALFTVSRQVSTITPPQAMGPN
SeqID9  181  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  241  LVLPDQKPPSRQSQTGSKVATQRPQTNESAPRSVAPTTMGPKRIGTGDRLINLVQGTYLA
SeqID9  241  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  301  LNATDPNKTKDCWLCLVSRPPYYEGIAILGNYSNQTNPPPSCLSTPQHKLTISEVSGQGM
SeqID9  301  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  361  CIGTVPKTHQALCNKTQQGHTGAHYLAAPNGTYWACNTGLTPCISMAVLNWTSDFCVLIE
SeqID9  361  """""""""""""""""""""""""""""""V""""""""""""""""""""""""""""""""""""""""

SeqID3  421  LWPRVTYHQPEYVYTHFAKAVRFRREPISLTVALMLGGLTVGGIAAGVGTGTKALLETAQ
SeqID9  421  """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  481  FRQLQMAMHTDIQALEESISALEKSLTSLSEVVLQNRRGLDILFLQEGGLCAALKEECCF
SeqID9  481  """""""""""""""""""""V""""""""""""""""""""""""""""""""""""""""""""""""""

SeqID3  541  YADHTGLVRDNMAKLRERLKQRQQLFDSQQGWFEGWFNKSPWFTTLISSIMGPLLILLLI
SeqID9  541  """""""""""""""""""""""""""""""""""""""""""""""""""""""""L""""""""""""""""""

SeqID3  601  LLFGPCILNRLVQFVKDRISVVQALILTQQYQQIKQYDPDRP
SeqID9  601  """""""""""""""""""""""""""""V""""""""""""""""
```